New York State Department of Transportation
Office of Engineering

OPERATIONAL PLAN
SFY 2001-2002 and Beyond

Quality
People

Quality
Service

Technical Services

Geotechnical Engineering
Highway Data Services
Materials
Transportation Research

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TECHNICAL SERVICES DIVISION

OPERATIONAL PLAN FOR SFY 2001/2002 AND BEYOND

PLAN OF ACTION

Introduction

The Technical Services Division's Operational Plan contains both recent accomplishments and the priorities, issues and goals for the program for SFY 2001/02 and beyond.

The Technical Services program provides materials and geotechnical engineering services, data services and targeted transportation research to the Department through the:

- conduct of specialized studies requiring investigations, testing and analysis, utilizing both internal and external resources.
- collection and dissemination of data on the inventory, condition, and use of the State Highway System.
- management and operation of a materials quality assurance program.
- development, recommendation, and implementation of engineering policies, standards and specifications.

These services are provided through the Materials, Geotechnical Engineering, Highway Data Services, and Transportation Research and Development Bureaus in the Central Office in conjunction with the Technical Services, Materials, Geotechnical and Regional Program Offices in the Regions. The Technical Services program is founded on a multi-million dollar investment in tangible assets of laboratories and equipment in both the Central Office and the Regions. These assets are utilized by an even more important cadre of well trained, dedicated and capable staff. There are 269 employees in the Central Office and more than 300 Regional counterparts. In the Regions, the program receives its' staff through the Design, Construction and Planning program budgets.

The program serves all elements of the Department as well as some external clients because of the program units' expertise and facilities. The services provided directly support both the planning and implementation of the Department's capital and maintenance programs, and thus impact the expenditure of several billion dollars each year.

The strength of our Division clearly lies within its people. We are a Division of experts in chemistry, geology, pavement design, materials, data services, structural engineering, geosynthetics, foundation engineering, material behavior, physical testing, decision sciences, quality assurance techniques, and many other disciplines.

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50 Wolf Road, POD 34
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When one looks to the future, it is easy to see that it will require increasing degrees of sophistication and at an accelerating pace. The extent to which the Department is prepared to function in a future of technological complexity will depend on how well we prepare within the Division and how well we are supported in our efforts by others.

The Division continues a long trend of being hampered by a shortage of human resources. In the following pages, our joint accomplishments over the past year are documented. That we were able to get so much done is a tribute to those who work in this Division and our counterparts in the Regions.

Over the next five years, many of our most experienced people will be retiring, others will be lost to the Division through transfer or promotion and still others will pursue private employment. The future success of the Division and by extension, the Department will depend on our ability to hire and train replacements in numbers sufficient to support the mission of the Division.

QUALITY SERVICES

The Division takes justifiable pride in its accomplishments; both in terms of its' production and continuous improvement achievements.

A sampling of the production activities follows:

NUMBER	ACTIVITY
1,241	NYSDOT employees trained by the Materials Bureau
1,982	NYSDOT employees trained by the Geotechnical Engineering Bureau
178	Court cases in which Photolog prints were utilized as evidence
64,420	Kilometers of State highway inventoried and condition scored
2,811	Transactions by Research Library
3	Research Newsletters
1,928	Soil Sample Identification Tests
283	Bridge Foundation Designs
15,800	Kilometers of highway filmed via Photolog, 4,890 Photolog prints sold
283	Evaluations of Materials, Plants, Facilities, Sources and Products
61	Soil Consolidation Tests
127	Wall Designs
30	Geologic Survey & Analysis of Rock Cut Slopes
5,853	"Short" traffic counts taken on 8,472 locations around the state
581	Vehicle classification counts processed
300	Public Inquiries for highway data answered
1,600	Municipalities contacted to update the Local Highway inventory
127	Materials Project Level Design Consultations
755	General Roadway Inspections
49	Revisions to Geotechnical Specifications & Standards
32	Materials QA Procedures developed/revised
71,150	Material Tests completed on 22,452 samples
4	Research and Technical Services Publications produced
3	Contract Research Assignments Executed
2,833	Geosynthetic Tests completed
1,696	Granular Material Soil Tests
81	Roadway Foundation Designs
170	Materials Construction Evaluations
221	Soil Strength Tests
405	Topsoil Tests
10	Papers published by Transportation Research Board or other National technical forums
3	Department sponsored NCHRP Research Projects approved for funding
32	Materials Standard Specifications developed

The following is a sampling of our continuous improvement activities:

DELAWARE AVENUE LANDSLIDE

May 16, 2000 is a significant day to the Technical Services Division. On that date, one of the largest landslides in recent history took place in the Town of Bethlehem, Albany County. After weeks of continuous rain, a 100,000 m^3 section of hillside moved, damming off the adjacent Normans Kill Creek and forcing the Department to close Delaware Avenue for several months.

What made this event difficult to deal with was its close proximity to Delaware Avenue. After the initial major landslide and subsequent smaller ones, only 10 m separated the roadway from a 20 m vertical drop off. Further complicating the situation was the close proximity of private residencies, commercial properties, and a 1.2 m water main, the sole source of water for the city of Albany. Several natural gas distribution lines were also in danger of being disrupted.

With this as a backdrop, the Geotechnical Engineering Bureau was at the center of a massive Department wide effort to stabilize and mitigate the effects of this large landslide. Their work included: around-the-clock monitoring of the site to insure the public's safety, extensive soil exploration and testing, instrumentation installation and monitoring of movement and pore water pressure, as well as design analysis, construction support, and regular communication with a myriad of concerned parties.

The Delaware Avenue landslide was the most significant event the Division faced in 2000. In resolving the landslide, the Department let a 14 million dollar repair contract in record time, and completed construction by November, 2000. Considering that fact that 50,000 m^3 of light weight fill was brought in to create a buttress, stabilizing the roadway, and the water and gas lines and the original stream bed all needed to be relocated makes this a remarkable achievement given the construction time frame. The entire Geotechnical Engineering Bureau deserves a tremendous amount of credit for their personal sacrifices and professional commitment to the successful resolution of this situation. In retrospect, the Delaware Avenue landslide reinforced our previously held beliefs of the Geotechnical Engineering Bureau as a premiere geotechnical organization.

NEW STANDARD SHEETS ISSUED

The Materials Bureau completed Engineering Bulletin 00-057 that was issued by Design and transmitted 15 new standard sheets detailing the construction of new concrete pavements. These standard sheets are the product of a task force consisting of Department staff and representatives of the American Concrete Pavement Association. The accompanying Section 502 of the Standard Specifications is expected to be completed in SFY 2001/02.

CHARLES PANKOW AWARD FOR CIVIL ENGINEERING INNOVATION

A team headed by the New York State Department of Transportation (NYSDOT) received the 2000 Civil Engineering Research Foundation's Charles Pankow Award for Innovation, for the rehabilitation of the Bentley Creek bridge in Chemung County. The award recognizes the contribution of organizations working collaboratively to demonstrate innovations in design, construction, or material use. The Transportation R&D Bureau, along with the Structures Division and Region 6, played a major role in garnering this nationally prestigious award. The project utilized Fiber Reinforced Polymer (FRP) deck panels to replace an existing steel reinforced concrete deck.

The project was a success due to NYSDOT's partnership with a long list of industry suppliers and other agencies. In addition to Hardcore, which manufactured the FRP deck panels, the individuals involved in the project included: Wagh Engineers (New York, N.Y.), Brunswick Technologies Inc. (BTI, Brunswick, Maine), Dow Chemical Co. (Midland, Mich.), Transpo Industries (New Rochelle, N.Y.), the FHWA, Chemung County, The Transportation Infrastructure Research Consortium, the State University of New York at Buffalo and Erie Interstate Construction.

COUNTY TRAFFIC COUNTING PARTNERSHIP

Many of the Counties in New York State already have a traffic counting program at some level to support decision making with regard to the county highways and bridges. Since their equipment and processing routines are incompatible with those of NYSDOT, the State and Counties often end up doing redundant work, placing traffic counters at the same locations just so each can collect the data in the format with which they are accustomed. The County Traffic Counting Partnership involves purchasing NYSDOT-compatible traffic counters for "permanent loan" to interested Counties and providing training and software for taking counts in accordance with Department standards. This eliminates the duplication of effort and, in the process, enriches the data set available to both the State and the Counties.

SUBSURFACE EXPLORATION TASK FORCE

The Subsurface Exploration Task Force, headed by Donald Dwyer of GEB, and working under the direction of the Design, Structures, and Technical Services Division Directors, developed policy for obtaining subsurface information on Department projects into the 21st century. The recommendations form the basis for future equipment, staffing, and contractual decisions.

ULTRA-THIN CONCRETE OVERLAYS

The Materials Bureau issued Engineering Instruction 01-008 entitled "Thin Portland Cement Concrete Overlays of Hot Mix Asphalt Surfaced Pavements". This instruction issued Special Specification 18502.060x and provides guidance on the design and construction of ultra-thin concrete overlays. This new specification provides an additional option to Designers when considering pavement repairs, particularly when rehabilitating intersections or ramps which are susceptible to rutting and shoving.

TEMPORARY RUMBLE STRIPS

The Department is committed to improving the overall level of safety in work zones for both the driving public and workers. To this objective, seven specific counter measures were implemented, including the use of temporary rumble strips for advanced warning to alert drivers of approaching changes to the driving pattern. The Transportation Research & Development Bureau, at the request of the Chief Engineer, investigated the use of rumble strips at work zones to determine if NYSDOT's current specification for thickness and spacing were appropriate or needed refinement. The specification for thickness was determined to be appropriate but stricter inspection was needed to insure that the required thickness was obtained. Researchers also determined that the specification for spacing should be adjusted to a maximum of 2.7m with the spacing being determined by the speed of traffic. An irregular spacing of the strips within each set was also found to be more effective in that it eliminated the sensation of driving over regularly spaced pavement joints. Also, a proprietary product and several other types of rumble strips used by Department maintenance forces were examined for effectiveness. As a rule, these rumble strips were determined to be effective for the short duration of most maintenance work zones, and with minor modifications the performance of these rumble strips could be enhanced. Study findings and recommendations have been provided to the Construction and Traffic Engineering and Safety Divisions.

COMPREHENSIVE PAVEMENT DESIGN MANUAL

The Comprehensive Pavement Design Manual has been completed and distributed to all those involved in pavement design for this Department. The manual brings together the existing guidance and blends with it the very latest thinking to produce a volume which contains in one place all the information required to develop an up-to-date pavement design. This effort required a great deal of communication and coordination across the entire Department, as there are a large number of stake holders dealing with pavements. The manual will be updated as new pavement design guidance is developed.

FEASIBILITY OF STRENGTHENING CONCRETE BEAMS USING FRP LAMINATES

The Transportation Research and Development Bureau, in collaboration with the FHWA Nondestructive Evaluation Validation Center, is conducting a test program to determine the actual load carrying capacity of deteriorated box beams, and to evaluate the effectiveness of bonded carbon Fiber Reinforced Polymer (FRP) laminate repairs on deteriorated prestressed box girders. The test results and analytical studies will be used to develop design and construction guidelines for using FRP laminates for strengthening prestressed concrete box girders in New York State. So far three beams were tested: 1) an intact beam 2) a deteriorated beam 3) and a deteriorated beam strengthened using FRP laminates. Analytical models were developed and calibrated using the test data. Design and construction guidelines will be developed after testing is completed this summer.

CONTINUED DEVELOPMENT OF THE PAVEMENT MANAGEMENT SYSTEM

The Department developed a pavement management system in the late 1980's based on pavement surface condition surveys. This process is still effective and functional and is used heavily in the development of each Region's capital program, as well as to provide an overall assessment of pavement conditions in the state. The Pavement Management Services Unit is working to further develop and update the existing system to take advantage of advances in technology for data collection and analysis.

IRI Data Collection Expansion

In the past, the Department collected roughness data using an International Roughness Index (IRI) only on the NHS and only for the purpose of federal HPMS reporting. For the first time, data from the 1999/2000 contract is being used as a factor in assessing pavement condition and has been distributed to regional personnel for information and use in developing regional paving programs. The Pavement Management Services Unit is continuing to work with Regions to help understand IRI concepts and the available data, and to develop additional ways to use the information to manage pavements. In the upcoming IRI data collection contract, the collection effort has been expanded to the entire touring route and significant reference routes, which will provide nearly complete system coverage for this data.

"Paperless" Sufficiency Scoring

The current sufficiency scoring process is paper based, with updates to the pavement scores and changes to the sufficiency file information being made in the field by hand on paper and then keypunched into the system. The Pavement Management Services Unit has been investigating new technologies such as PalmPilots, GPS Units, and other electronic media to automate the documentation and data entry portions of the pavement survey. Improvements through automation in the scoring and recording process are expected to increase the efficiency and accuracy of the condition survey. A pilot project is anticipated during the summer of 2001.

Photolog Digitization Project

Work has begun on the first phase of a two phase project to modernize the 35mm film based photolog system. A contract was prepared and let to digitally scan the last cycle of photolog images. Work will progress county-by-county and will take approximately one year to complete. Image distribution to the regions and residencies has been resolved. A server has been put in place at the main office to house the image files and provide network-based access. Network testing has been conducted to assess system performance with multiple users. A prototype viewer has been created in ArcView to link photolog images to road segments and other data in the GIS environment. A simple VCR-like player, independent of ArcView, is also available to users. Most of the elements to complete the first phase have been put in place and work on the second phase, preparing for direct digital capture, is ready to begin.

RESEARCH ON SUBSURFACE DRILLING METHODS

The Geotechnical Engineering Bureau has been evaluating information gathered from an Division Operational Goal on "Comparison of Drilling Methods: Evaluation of Different Hammers for Standard Penetration Testing". This information is being used to develop new standards for soil explorations and to calibrate technologically advanced equipment that is being procured for the Department's drill rig fleet. Geotechnical Engineering believes that this is also the most extensive hammer study ever done and will likely be the basis for improvements to the science of soil mechanics itself.

NEW QA PROCEDURES FOR HOT MIX ASPHALT (HMA) PRODUCTION

The Materials Bureau has revised and updated Materials Procedure 94-04M - "Testing Frequencies Using Random Sampling at a HMA Plant" and Materials Procedure 96-02M - "Quality Assurance Procedures for Quality Control HMA Production". The revised procedures incorporate many items outlined in the producers' control plans and should reduce the Department's risk of receiving out of specification material.

POLICE PRESENCE REDUCES SPEED IN WORK ZONES

The Transportation Research and Development Bureau staff worked with the Construction Division to statistically evaluate the impact of police presence and enforcement in work zones. TR&DB's role included development of experimental design and data collection protocols, data reduction and analysis, and the interpretation of results. The study encompassed five work zones throughout the state over the past two years. A number of enforcement strategies as well as other speed reduction methods were tested. The results indicated all strategies that include the presence of police resulted in the reduction of average speeds to or below the posted work zone speed limit. Also, police presence significantly reduced the percentage of vehicles traveling more than ten miles over the speed limit.

NEW GEOTECHNICAL ENGINEERING MANUALS

Two important manuals were developed and placed on the Department's website this year, the "Geotechnical Design Procedure for Flexible Wall Systems" (GDP-11) and the "Drilled Shaft Inspector's Guidelines" (GEM-18). GDP-11 is used by designers, consultants, and contractors as the basis for flexible wall designs in both original design and proposed changes during construction. GEM-18 provides information vital to the proper use of drilled shafts, a type of foundation being used much more commonly in recent years yet these techniques are still unfamiliar to many people.

EXPAND THE AVAILABILITY OF TRAFFIC VOLUME HOURLY REPORTS

The Highway Data Services Bureau is expanding the availability of its' "Coverage and Special Count Hourly Reports" traffic information by making them available in Adobe Acrobat PDF electronic format. This data will be made available on CD and accessed via a Microsoft Access database and user interface. The initial screen will allow the user to first access AADT information based on selectable route/road criteria, then display (and print if desired) the underlying base data in the form of an Hourly Report for the selected highway AADT. Even though the initial version will have historic AADT information (to 1990), the Hourly Reports were only created starting in the year 2000.

UPDATED PREVENTIVE MAINTENANCE TREATMENTS

The Materials Bureau issued Engineering Instruction 01-011 entitled "New Specifications for Micro-Surfacing, Paver-Placed Surface Treatments and Quick-Set Slurry Seal and Revised Requirements for Bituminous Emulsions". The use of these preventive maintenance treatments should save the Department money by providing a larger selection of maintenance options, so the best alternative may be selected for each project. These updated preventive maintenance treatments support the Department's commitment to maintaining the investment in our existing pavement infrastructure. Design guidelines for these treatments will be included in Chapter 10 of the Comprehensive Pavement Design Manual.

ASSISTANCE PROVIDED FOR QUALITY ASSURANCE PROGRAMS

The Transportation Research and Development Bureau has provided statistical consultation in developing quality assurance and acceptance plans for a number of program areas. The services included development of acceptance strategies, risk analysis, and the design and implementation of sampling plans. Some of the recent efforts include the quality assurance and sampling plans for acceptance of bridge bearings, bridge coating thickness, digitized photolog images, and the Transportation Maintenance Division's programmatic quality assurance program.

CORROSION RESEARCH

The Geotechnical Engineering Bureau continues to coordinate an effort to understand the life span of metal elements buried in soil, particularly the reinforcing straps in Mechanically Stabilized Earth Systems. Wall straps have been wired, backfills have been tested, and new instruments have been obtained to determine a wall strap's gradual loss of galvanization and how the rate of that loss compares with the design assumptions and service life. Early results indicate tested walls show deterioration well within the expected rates.

APPENDIX

DIVISIONAL GOAL STATEMENTS
for 2001/2002

Geotechnical Engineering Bureau

- 01-1 QC/QA of Granular Material
- 01-2 Rock Core Log Development*
- 01-3 Develop Operational Procedures for Spectral Analysis of Surface Waves*

Highway Data Services Bureau

- 01-4 Highway Functional Classification Mapping
- 01-5 Department-wide Access to Digital Photolog Files
- 01-6 Highway Data Management System

Transportation Research and Development Bureau

- 01-7 Policy and Procedure Manual, Documenting SPR II Expenses
- 01-8 Implementation of Internal Electronic Information Resource Sharing
- 01-9 Policy and Procedure Manual, Research Oversight Functions*

Materials Bureau

- 01-10 Precast Concrete QC/QA (Implementation)*
- 01-11 Materials Inspection Manual*
- 01-12 Section 502 - Portland Cement Concrete Pavement*
- 01-13 Section 400 - Bituminous Pavements (Section 401-403)*

* denotes new goal for 2001

Technical Services Division
GOAL STATEMENT

Goal Name: #01-1 QC/QA of Granular Material

As Is: The responsibility for quality control of granular material rests most heavily upon the Department. It is not quite as obsolete as the way it was formerly administered by Soil Control Procedure #13, but even the new Geotechnical Control Procedure #17 puts the majority of the testing burden on DOT. Thus the State does the only "official" testing, and all the effort placed in production quality control by the supplier is not utilized in the acceptance process.

Desired State: Unite production control with the responsibility for quality control. Utilize production quality control in the acceptance procedure. Reduce the State's testing responsibility to a quality assurance level.

Team Leader: Don Dwyer

Team: Todd Dickson, Steve Mabin, Bob Burnett, New York Construction Materials Association representative, AGC representative, Regional representation, Construction Division representation.

Specific Goal for SFY 2001-2002: Review certification and acceptance standards for testing. Benchmark existing practices in this area, particularly from surrounding states. Investigate the suitability of "standard" tests for production applications. Develop an action plan to involve industry and investigate their willingness and ability to participate.

Rationale: The actual control of any production process is in the hands of the producer. They must sample and test their own product to keep their process in control. Taking advantage of this work which is already necessary could reduce DOT's workload, if quality can still be assured through random testing and appropriate actions.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-2 Rock Core Log Development

As Is: Rock cores are frequently inspected by the Department's Engineering Geologists for design and construction purposes. Certain information is gathered from these inspections and used to develop rock parameters. This basic information is not routinely captured along with the other data recorded in the subsurface exploration logs.

Desired State: Basic information about the rock core is captured for posterity and kept with the rest of the information about that subsurface exploration.

Team Leader: Alex Yatsevitch

Team: L. David Suits, Phillip Walton

Specific Goal for SFY 01-02: Develop a rock core log with a format similar to that of other portions of the subsurface exploration log. Include basic information which is central to any examination of a core by the Department's Engineering Geologist: rock type, recovery, fracturing, RQD, hardness, weathering, etc. Reach a consensus among users as to the proper content and format and implement its' use.

Rationale: Basic information on rock cores is being gathered and not captured along with the other information from subsurface exploration. This information could be useful to other geologists, designers, and bidders. It could be archived and retrieved many years from now when a new project is initiated in the same area. It could be used to improve the quality of generalized bedrock mapping or the knowledge about a particular area of bedrock.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-3 Develop Operational Procedures for Spectral Analysis of Surface Waves (SASW)

As Is: The classification of seismic Soil Profile Types is based on evaluation of spoon blow counts and visual description of soil samples obtained from a site.

Desired State: Attain proficiency in performing field tests and analyzing results for:
a) classifying Soil Profile Type;
b) developing soil shear wave velocity profile for site-specific ground response analysis.

Team Leader: Teh Sung

Team: Makbul Hossain, Priscilla Duskin

Support: GEB's Pavement Design Services Group and Hydro-Geophysical Unit.

Specific Goals for SFY 01-02:
1. Receive training from the manufacturer on field operation and data analysis;
2. Perform acceptance testing of the equipment and software;
3. Develop a draft Operations Manual.

Rationale: One of the new seismic design criteria set forth by the Structures Division for "downstate" bridges requires that GEB classify the soil profile at every bridge site to a depth of 30 m in accordance with the latest seismic provisions of the National Earthquake Hazard Reduction Program (NEHRP). Using the soil information obtained from SASW testing would result in a more accurate Soil Profile Type and also a more accurate ground response analysis than that based upon the more conventional soil parameters such as SPT blow count or undrained shear strength. This will reduce the need for making overly-conservative design assumptions, which translates into cost savings.

The spectral analysis of surface waves (SASW) is based on the principle that the various wavelength components in an impact-generated surface wave penetrate to different depths in the soil layers. It is an economical and reliable geophysical field test method to determine material properties of subsurface soil layers.

SASW testing is also an excellent tool to evaluate pavement layer thicknesses, pavement material properties (including the stiffness profiles of the pavement structure) and segregation in concrete and asphalt pavements.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-4 Highway Functional Classification Mapping

As Is: Functional class mapping is a by-product of a more inclusive effort to make data for the entire Federal Aid System accessible through GIS. Thus far, the highway data files for the entire state system and the non-state Federal Aid highways for Regions 1, 6, and 7 can be accessed through GIS. For the remaining Regions, the only available maps showing functional classification are photocopies of maps of the functional classification from 1980 with hand-drawn edits to reflect the 1990 Census-based changes.

Desired State: A full integration of the highway data files with the map-based GIS representation for the entire Federal Aid System and a complete set of GIS-based functional classification/Federal Aid System maps for the entire state.

Team Leader: Patricia Maple

Team: Walt Frisbee, Donna Ieronimo

Specific Goal for SFY 01-02: Complete the project before the Urbanized Area Updates are received from the 2000 Census (anticipated to be around April, 2002).

Rationale: The decennial Census typically results in an update to the functional classification system three years later. By completing the mapping project prior to 2003, new maps can be produced simply by changing the functional class designations on the highway files and printing new maps. Without this GIS-based tool, hundreds of new maps will need to be prepared cartographically (hand drawn, chart taped).

In addition, complete knowledge of the entire Federal Aid System (as opposed to just the state system) is becoming increasingly important in the day-to-day operations of the transportation community. Under TEA-21, in particular, federal funding availability is also dependent on the availability of good, non-state system data as well as state system data. The effort to make the highway data files consistent with and accessible through GIS will be paid back many times through the increased analytical capability and reduced staff time to access data in the future.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-5 Department-wide Access to Digital Photolog Files

As Is: The photolog is a valuable tool used by many Department managers, designers, claims attorneys, and the public to view design project sites, pavement deterioration, pavement or roadside conditions, signs, guiderail, accident locations and more. There is only one photolog viewer and one set of film per Region. The viewer is usually located at the regional office and must be shared among many users. This severely restricts access to the photolog, particularly for residency-based users and the public. Color prints can be made, but it takes one week for printing. Also, long projects can require many prints (e.g., 200 prints for a two mile project), which can be awkward to use.

Desired State: Use existing technology to create fast, widespread access at the main office, regions and residencies to the photolog through digitization of the 35mm photolog film and electronic access. Access at the main office and regions will be through a server, and through CD's containing county specific files for the residencies. Image files will be distributed to the regions through portable external hard drives.

Team Leader: E. John Lewis

Team: Rick Bennett, Ralph Hopkins, Robert Powell, Stephen Lester

Specific Goals for SFY 01-02:

1. Continue scanning the latest cycle of photolog film (estim. completion Summer 2002)
2. Identify major users at main office and regional levels to create server access to images.
3. Obtain a simple, functional image viewer and distribute to major users.
4. Complete development and distribution of a simplified ArcView viewer for advanced functionality of digital photolog system.
5. Prepare RFP for digital camera, storage and processing system for direct digital capture (Project Phase 2).

Rationale: Any user, including Executives, Regional Directors, designers, managers and field supervisors, should be able to view the image of a road segment and other related information from their desktop computer. This increased access to already existing information will save considerable field travel, provide more comprehensive consideration of field conditions in project selection, scoping and design, provide visual access to site conditions by managers and executives responding to complaints or inquiries, and more.

Technical Services Division

GOAL STATEMENT

Goal Name: #01-6 Highway Data Management System

As Is: The Department largely decides how to expend a $2 billion Capital and Maintenance Progra budget on outdated (30 year old) traffic and highway inventory data collection & storage technology that is cumbersome to use and maintain, and also limits access to the information the data holds.

Desired State: To implement a networked Client-Server information system which makes critically relevant data easier to collect/maintain and more importantly, is more accessible (on the appropriate informational level) to numerous Department groups, Regional Offices, other State and Federal Agencies, and the public at large. The intent is to deploy a "Relational database" model information system to support the collection, processing, and analysis of this infrastructure database. It would include all the tools necessary to collect, maintain, and summarize the data to verify its integrity and accuracy.

Team Leader: Todd Westhuis

Team: Michael Fay, Patricia Maple, Allen Pooler, Bernie Schatz

Specific Goal for SFY 01-02: To complete execution of an agreement, initiate and complete Phase I (existing systems review and development of a proposed approach), and solicit approval/funding to proceed with Phase II (implementation) of the project.

Rationale: Management will have more accessible, accurate and timely information on which they can make capital project decisions. Information from this infrastructure data will also be more accessible by numerous NYSDOT, Federal, and local governmental program areas, increasing the benefit derived from the ongoing data maintenance investment.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-7 Policy and Procedure Manual, Documenting SPR II Expenses and Obligations

As Is: In developing its annual research program, TR&DB determines program size by adding savings from the prior federal-fiscal year to known SPR Part II new-year federal-funding. Currently, savings are determined by comparing actual versus expected expenses for each project charged in the prior federal-fiscal year. However, savings for each project are accurate only if charges against it cover the specific time period October 1 through September 30. Further, actual SPR Part II "carryover" can only be computed by properly matching state project numbers to the original federal-aid project obligating the money. TR&DB does not have a current system to account for its' expenditures and accurately compute savings.

Desired Status: Develop methods to accurately compute savings and identify lapsing dates of federal-aid SPR Part II funds.

Team Leader: Austin McCarroll, Colin Campbell, Richard Dunn (FHWA)

Specific Goal For SFY 01-02: Develop a procedure to determine annual expenditures for each project and use that information to compute savings against each federal-aid SPR Part II project. Document the procedure and include it in TR&DB's Policy and Procedure Manual under Chapter 5, Program Evaluation.

Rationale: Savings, or carryover, must be obligated within three years of the conclusion of the federal-fiscal year it became available (or within one year for funds de-obligated outside the three year window). In recent years, savings have been increasing, rendering it important to accurately determine current carryover in order to advise management of the potential of lapsing federal-aid SPR Part II funds.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-8 Development and Implementation of Internal Electronic Information Resource Sharing

As Is: The information contained in the Transportation Research and Development Bureau Library is currently not accessible via the Department's internal network know as "Intradot." This goal will include the development and implementation of techniques for sharing information resources electronically.

Desired Status: Develop a Library web page to be placed on the internal NYSDOT site "Intradot." The library web page will be a portal for disseminating the valuable resources of the TR&DB library including: online catalog, research databases, library services, and new acquisitions.

Team Leader: Lynne Webb

Specific Goal For SFY 01-02:

1. Develop an "Intradot" web page for the Transportation Research & Development Bureau Library to increase access to information resources.

2. Investigate placing the online catalog on the "Intradot" and outline placement process. Coordinate with the Information Services Bureau.

3. Utilize "Intradot" web page to identify research needs.

Rationale: In order for the Library to achieve an optimal level of information and resources sharing it is necessary to make full use of the Department's electronic transfer capabilities. Increased access to accurate and timely information is essential to maintaining a high level of research and productivity to fulfill the Department's overall mission.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-9 Revision of the Transportation Research & Development Bureau's Policy & Procedures Manual, Research Oversight Functions.

As Is: Recently the Department's executive management initiated restructuring of research oversight functions. The Resource & Risk Management Bureau will assume oversight of the SPR funds (I,II) and will provide general oversight of contract research projects conducted through TIRC, UTRC, and NYSERDA. The existing Policies & Procedures Manual does not reflect the current collaborative arrangement between the Transportation Research & Development Bureau and the Resource & Risk Management Bureau. It lacks the mechanism needed to coordinate the functions of both bureaus.

Desired State: A revised policy and procedures document that establishes the roles and functions of the Transportation Research & Development Bureau, and that accurately reflects the Bureau's new role. The document will define how the two bureaus will collaborate to carry out conduct of the research program. It will provide detailed procedures for coordinating the functions of both Bureaus so as to avoid confusion and overlap, and ensure that conduct of the program is carried out in the most effective and efficient manner.

Team Leader: Robert Valenti, Richard Albertin

Team: Ossama A. Elrahman, Paul Hoole

Specific Goals for SFY 01-02: Develop a revised Bureau Policy & Procedures Manual that clearly articulates the Bureau's role in conducting research and organize research coordination functions with the Resource & Risk Management Bureau.

Rationale: The recent restructuring of research functions dictates the revision of policies & procedures. Procedures for conducting research must undergo some changes to accommodate the division of research between the two bureaus, namely; the Transportation Research & Development Bureau and the Resource & Risk Management Bureau. Definitions and categorization of engineering and non-engineering research needs to be added to the manual. Roles and responsibilities of each bureau must be clearly articulated to avoid confusion. A more detailed and specific description of procedures for the conduct of contract research for which Resource & Risk Management will take the lead, needs to be included. The new manual would revise program development procedures and responsibilities for research program approval, and solicitation to reflect the new changes.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-10 Precast Concrete QC/QA

As Is: This is the next phase of work for implementation of precast concrete QC/QA. Significant progress was made with the completion of Goals 99-8 & 00-8. Implementation was commenced in 2000 with the final acceptance of the QC/QA program and is expected to continue through January of 2002. Progress to date includes specification revisions, Quality Control plan reviews, and inspector training and certification to meet the requirements of the program. The QC/QA based acceptance procedure for precast concrete products was completed by a joint Department/Industry Task Force. This next phase of work will focus on the implementation of the new procedure.

The quality assurance procedures for precast concrete vary between products. Some procedures rely heavily on manufacturer's quality control while others rely mostly on sampling, testing and inspection by Department resident plant inspectors. A new specification, 704-03 Precast Concrete, that combines products having similar fabrication requirements was recently implemented. No changes were made to the basis of acceptance for the products.

For a considerable number of precast items, the precaster prepares shop drawings in accordance with the contract documents to clearly identify the fabrication requirements. The Department has the responsibility of reviewing and approving these shop drawings. This has the potential to delay project schedules.

Desired State: Utilize quality control by the manufacturer and quality assurance by the Department for assuring acceptable quality in precast concrete units to the extent that is reasonable.

Team Leader: Jim Reidy

Team: B. Ziemniak, R-4, C. Schultz, R-8, K. Clements, M.O. Materials Bureau

Specific Goal: For SFY 01-02 Specific goals for the current fiscal year include:

- Specification revisions for precast concrete items.
- Complete reviews of Quality Control Plans for all precast producers.
- Train & certify DOT staff to meet QA inspection requirements.
- Begin implementation of the precast acceptance procedure.
- Development of a shop drawing certification program for standard items.

Rationale: The use of precast concrete products by contractors has increased significantly during the past decade and will continue in the foreseeable future. This increased use has placed a much higher demand for inspectors to cover the manufacturing operations under the existing quality assurance program. The QC/QA process will be a more effective method for assuring acceptable quality of precast concrete products, while a shop drawing certification program will provide for more timely processing of drawings.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-11 Materials Inspection Manual

As Is: The current manual was issued in May, 1989. The manual provides the procedures, in outline form, used by the Department to determine the acceptability of materials.

Desired State: Update the manual to reflect modifications to the Standard Specifications since May, 1989. Consider making the revised manual available electronically.

Team Leader: Ken Clements

Team: Kurt Matias, Pat McCabe, Nancy Connolly, Charlie Lapo

Specific Goal: Evaluate each of the Materials (Section 700 Materials Details) specified and provide the evidence of acceptability for each in outline form. Evaluation will also be made to determine the appropriate database to be utilized for electronic access.

Rationale: The evidence of acceptability for specified material items incorporated in Department contracts varies significantly. A readily accessible and current document identifying the appropriate forms of evidence and the associated procedures for obtaining this evidence is needed.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-12 Section 502 - Portland Cement Concrete Pavement

As Is: The existing Section 502 Standard Specification is based on outdated technology and standards. An updated specification has been distributed for in-house review, but has not completed the formal review process. The related Standard Sheets were recently updated and issued under EB 00-57.

Desired State: To improve Portland cement concrete (PCC) pavements by improving the design, specifications, construction and public perception of rigid pavements, in order to provide New York State's users with a long lasting, smooth, safe and economical pavement. As partners, NYSDOT and the PCC industry will accomplish this by determining the needs of designers, contractors and customers, and by providing the technology necessary to build durable, low maintenance pavements.

Team Leader: William Cuerdon & Michael Brinkman, NYSDOT
Peter Romano & Nick Caparelli, ACPA.

Team: Julian Bendana, TR&DB, Mike Gray, Construction Division, Chris Waite, NYSTA, Dick Forrestel, Cold Spring Construction, John Leonne, Leonne Construction.

Specific Goal: Issue the revised 502 Specification with the appropriate design guidelines. Revision highlights include changes in equipment requirements, permeable base requirements, finishing, thickness determination, texturing, curing, early opening to traffic, utility and drainage structure isolation, joint construction and smoothness.

Rationale: In order for the Department to achieve its' goal of providing smoother, safer, longer lasting and more economical PCC pavements we need to update and revise our current outdated 502 Specifications.

Technical Services Division
GOAL STATEMENT

Goal Name: #01-13 Section 400 - Bituminous Pavements (Sections 401-403)

As Is: The Department first implemented the use of Superpave design mixtures in 1996. According to the plan, the implementation was scheduled to be completed using special specifications by 2000. Currently, all the HMA projects are constructed using Superpave design mixtures under the provisions of special specification and the New York State Standard specifications.

Desired State: Incorporate the Superpave special specifications into the Department's Standard Specifications as:

- Section 401 - Plant Production - General
- Section 402 - HMA Pavements
- Section 403 - Marshall Designed HMA Mixtures

Team Leader: Gary Frederick

Team: Zoeb Zavery, Sigrid Rantanen, Chris Euler

Specific Goal: Establish Superpave designed HMA mixtures as Department standard.

Rationale: Five years ago the Department made a commitment to implement the Superpave mixture design system. Last year approximately 90% of the Department's paving used this system. Incorporating and updating the special specifications currently used to produce, design and construct Superpave as part of the Department's Standard Specifications will further this effort.

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